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### **REMARKS**

The present response is intended to be fully responsive to all points of rejection raised by the Examiner in the Office Action dated March 21, 2007, and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

### **Status of Claims**

Claims 1 – 8 are pending in the application and have been rejected. New claim 9 is added herewith and is supported by the specification at page 6, first paragraph, and page 10, first paragraph.

### **CLAIM REJECTIONS**

#### **35 U.S.C. § 102(e) Rejections**

Claims 1, 2, and 8 have been rejected under 35 U.S.C. §102(e), as being anticipated by U.S. Patent No. 6,442,615 to Nordenstam et al. (hereinafter “Nordenstam”). Applicant respectfully traverses this rejection in view of the remarks that follow.

Nordenstam describes using a network model to determine the best path in a network as a function of the bandwidth capacity available between the nodes of the network. Nordenstam does not describe techniques for determining how to establish a path within the network model, but rather how to select a “best” path from among several possible paths. As far as how to determine what are the multiple possible paths within the network model, Nordenstam merely suggests using “a dynamic routing protocol” (col. 8, lines 41-42; col. 10, lines 10-11) or “some kind of dynamic routing protocol” (col. 12, lines 45-46). Not only does Nordenstam not describe a routing protocol, Nordenstam recognizes that paths may be found within the network model “that have no counterpart within the real network” (col. 10, lines 14-15).

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In contrast to Nordenstam, the claimed invention discloses a routing protocol that uses a network model to determine the actual physical path that a message would take if it were sent between devices of the physical network. It does so by simulating the sending of a message within the network model between models of the physical network devices, which models are referred to as “device components”. Each device component is configured to receive a simulated message and behave as its associated physical device would, and can therefore decide to which other device component it should send the simulated message. The path that the simulated message traverses from device component to device component within the network model represents the path that a real message of the same type would traverse from physical device to physical device within the physical network.

These features of the invention are recited in claim 1 as follows (emphasis added):

“providing a plurality of device components to model a physical computer network, wherein each of said device components model an aspect of a network device of said physical computer network;

simulating sending a network message within said model of said computer network from a source device component modeling one of said network devices of said physical network to a destination device component modeling another of said network devices of said physical network along a device component path, wherein said simulated message only traverses any of said device components which model said network devices of said physical computer network; and

recording the device components traversed by said simulated message within said model of said physical computer network, thereby determining said path that said network message would take among said network devices in said physical computer network.”

While Nordenstam does make vague references to “modelling the network,” “superimposing real traffic on the virtual network,” using a “virtual model of the network,”

etc., nowhere does Nordenstam describe anything equivalent to the device components (DCs) of the present invention which are defined in the specification as that which “may maintain any information concerning certain functions or aspects of” physical network elements,” which “may communicate directly with other DCs,” which “uses message passing to independently communicate with any neighbor or adjacent DCs without the need to communicate directly with a centralized network management device,” and where “Each DC receiving the simulated message is configured with the information it needs to decide where a real message with the same characteristics would be forwarded” (pages 5-6 and 10 of the specification). There is, therefore, no suggestion within Nordenstam of determining a path in the manner that the claimed invention discloses. On the contrary, Nordenstam describes “in the control and computation unit 14...a calculation is carried out with respect to a virtual network modelling the real network such that all connections are routed along the best route possible without concern for the load situation at establishment time” (col. 9, lines 15-19). By having control and computation unit 14 determine a “best route”, this clearly demonstrates that 1) Nordenstam uses his network model to determine multiple possible routes for a message to take, whereas the claimed invention only determines the single actual path that a message would take in the physical network, 2) Nordenstam is not interested in the actual path that a message would take in the physical network, but rather what “best path” the message should be forced to take, and 3) this “best path” is not something that is determined by the elements of the model themselves, but by a centrally-made decision by control and computation unit 14, whereas in the claimed invention the device components themselves decide what path the message is to take.

Furthermore, Nordenstam’s “generating unit selects at random a source and destination node, then computes the best routes through the simulated network” (col. 12, lines 34-36). No mention is made of sending a simulated message through the simulated network as in the claimed invention, nor of tracking a single route taken by such a message, but rather of computing “best routes” – stated in the plural, which clearly shows that Nordenstam does not follow the path that a single message would take within his model.

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While Nordenstam provides “a network simulator that simulates calls, routing and establishment procedures” (col. 12, lines 56-59), this in no way anticipates the recited features of the claimed invention as described above. This brief mention of a network simulator that simulates routing provides no details as to what steps are to be followed in order to determine a route, and therefore does not satisfy the requirements that to anticipate a claim, the reference must teach every element of the claim, and that “The identical invention must be shown in as complete detail as is contained in the...claim” (*Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1566 (Fed. Cir. 1990) as quoted in MPEP 2131).

To summarize, Nordenstam’s mention of a network model and of using “some kind of dynamic routing protocol” to determine multiple possible paths from which a best path is selected does not anticipate Applicant’s claim to a specific route discovery protocol for determining in advance the actual path that a message will take.

In view of the above arguments, Applicant respectfully submits that claim 1 is not anticipated by Nordenstam under 35 U.S.C. § 102(e), and is therefore allowable.

Claims 2 – 8 depend directly or indirectly from independent claim 1, and are, *a fortiori*, deemed allowable.

Applicant therefore respectfully requests that the rejection of claims 1, 2, and 8 be withdrawn.

### **35 U.S.C. § 103(a) Rejections**

Claims 3 – 7 have been rejected under 35 U.S.C. § 103(a), as being unpatentable over Nordenstam in view of U.S. Patent No. 6,728,214 to Hao et al. (hereinafter “Hao”). While Applicant respectfully traverses this rejection, claims 3 – 7 depend directly or indirectly from independent claim 1, and are, *a fortiori*, deemed allowable.

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**Conclusion**

Applicant respectfully submits that entry of the instant amendment and consideration of the above remarks renders the present application in condition for allowance, which action Applicant respectfully solicits.

**Petition For One-Month Extension Of Time Under 37 CFR 1.136(a)**

The period for responding to the instant Notice was set to expire on June 21, 2007. Applicant hereby requests that the period for responding to the instant Office Action be extended by one (1) month, so as to expire on July 21, 2007. Accordingly, this response is being timely filed.

The fee for a Petition for a One-Month Extension of Time is Sixty Dollars (\$60.00) dollars for a small entity. The United States Patent and Trademark Office is hereby authorized to charge Deposit Account 501380 in the amount of \$60 and any additional fee which is necessary in connection with the filing of this amendment and petition.

Favorable action on this response and petition is courteously solicited.

Respectfully submitted,



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